

## AMENDMENTS TO THE CLAIMS

Please note and consider the claims in the application as identified below, with currently amended claims comprising markings in the form of strikethrough for deletions and underlining for additions.

1. (currently amended) A method for modeling ~~a~~ at least one chamber of a building structure and to enable for enabling estimation of various projects to be completed within said building structure ~~chamber attributes~~, said method comprising the steps of:
- (a) selecting, from an estimation program, a non-derivational default volumetric polyhedron as an estimation polyhedron, said estimation polyhedron having comprising a plurality of facets with each comprised of at least one estimation attribute including an area, wherein said estimation polyhedron estimates at least one of the group consisting of an area, volume, and costs associated with at least one of said facets;
  - (b) assigning each of said facets at least one pre-defined estimation attribute that corresponds to a structural attribute of said chamber;
  - (bc) morphing a selected facet of said plurality of facets of said estimation polyhedron into to obtain a morphed facet to, such that said estimation polyhedron more closely approximates said chamber undergoing estimation;
  - (ed) revising said at least one estimation attribute of said morphed facet and any adjacent ones of said plurality of facets of said estimation polyhedron as also modified and affected by said step of morphing step, in order to maintain a closed volume of said estimation polyhedron; and

- (de) repeating said step of morphing and said step of revising steps until said estimation polyhedron accurately depicts said chamber undergoing estimation; and
- (f) generating a project estimate by selecting at least one facet of said estimation polyhedron and entering an estimation request into a query in said estimation program, said project estimate is based upon and associated with said estimation attributes of said estimation polyhedron and corresponds to a project to be completed in said building structure.

2. (original) The method as recited in claim 1, wherein:

- (a) said morphing step further comprises the step of when additional facets better approximate said chamber undergoing approximation, partitioning said selected facet of said estimation polyhedron into at least a first and second morphed facets to provide an improved estimation of said chamber undergoing estimation; and
- (b) said revising step further comprises the step of from said at least first and second morphed facets of said selected facet, including additional estimation attributes corresponding to said first and second morphed facets.

3. (original) The method as recited in claim 1, further comprising the step of:

- (a) defining said chamber as a room within a building; and

- (b) defining said chamber attributes to include a surface area correlating to said plurality of facets of said estimation polyhedron.

4. (original) The method as recited in claim 3, wherein said defining said chamber attribute step further comprises the steps of:

- (a) assigning one of said plurality of facets of said estimation polyhedron a floor attribute of said room;
- (b) assigning each of others of said plurality of facets of said estimation polyhedron adjacent to said facet having said floor attribute a wall attribute; and
- (c) assigning one of said plurality of facets of said estimation polyhedron adjacent to said ones of said plurality of facets having said wall attribute a ceiling attribute.

5. (original) The method as recited in claim 1, wherein said selecting a default polyhedron further comprises the step of:

- (a) defining said default polyhedron to include:
  - i. at least 4 facets each defined by a plurality of vertices shared by others of said at least 4 facets;
  - ii. a surface area for each of said at least 4 facets; and
  - iii. a volume of said default polyhedron as bounded by each of said at least 4 facets.

6. (currently amended) A method for graphically estimating attributes of a room of a building structure, said method comprising the steps of:

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- (a) selecting a default volumetric polyhedron as an estimation polyhedron to approximate said attributes of said room, said estimation polyhedron ~~having comprising a plurality of facets with each comprised of at least one estimation attribute including an area, wherein said estimation polyhedron estimates at least one of the group consisting of an area, volume, and costs associated with said at least one of said facets;~~
  - (b) assigning each of said facets at least one pre-defined estimation attribute that corresponds to a structural attribute of said room;
  - (bc) morphing at least one of said plurality of facets of said estimation polyhedron to obtain a morphed facet and to more closely approximate said room undergoing estimation;
  - (ed) revising said at least one estimation attribute of said morphed facet and any adjacent facets of said estimation polyhedron also modified and affected by said step of morphing, in order to maintain a closed volume of said estimation polyhedron;
  - (ee) repeating said morphing and revising steps until said estimation polyhedron accurately depicts said room undergoing estimation; ~~and~~
  - (ef) listing said estimation attributes of said estimation polyhedron as said attributes of said room; and
  - (g) generating a project estimate by selecting an estimation attribute from said list and entering an estimate request into a query in said estimation

program, said project estimate is based upon and associated with said selected estimation attribute and corresponds to a project to be completed in said building structure.

7. (original) The method as recited in claim 6, wherein said selecting step further comprises the steps of:

- C1
- (a) assigning one of said plurality of facets of said estimation polyhedron a floor attribute of said room;
  - (b) assigning each of others of said plurality of facets of said estimation polyhedron adjacent to said facet having said floor attribute a wall attribute; and
  - (c) assigning one of said plurality of facets of said estimation polyhedron adjacent to said ones of said plurality of facets having said wall attribute a ceiling attribute.

8. (original) The method as recited in claim 6, wherein:

- (a) said morphing step further comprises the step of when additional facets better approximate said chamber undergoing approximation, partitioning said selected facet of said estimation polyhedron into at least a first and second morphed facets to provide an improved estimation of said chamber undergoing estimation; and

- (b) said revising step further comprises the step of from said at least first and second morphed facets of said selected facet, including additional estimation attributes corresponding to said first and second morphed facets.

9. (original) The method as recited in claim 6, further comprising the steps of hierarchically grouping additional rooms into levels and grouping a plurality of levels into a structure.

10. (currently amended) A graphical method for estimating material requirements for a room within a

structure, wherein said room is comprised of a plurality of planes, comprising:

- (a) displaying a default surface polygon, said surface polygon forming one plane of a plurality of planes of a volumetric estimation polyhedron for approximating said room, said plurality of planes each further having an estimation attribute assigned thereto that corresponds to a structural attribute of said room, ~~wherein said estimation polyhedron estimates at least one of the group consisting of an area, volume, and costs associated with said at least one of said facets;~~
- (b) morphing said default surface polygon into a morphed polygon to approximate a plane of said room undergoing estimation;

- (c) revising said estimation attribute of said morphed polygon and adjacent ones of said plurality of planes affected by said morphing step in order to maintain a closed volume of said estimation polyhedron;
- (d) repeating said morphing and revising steps until said estimation polyhedron accurately approximates said room undergoing estimation; and
- (ee) converting said estimation attributes of said estimation polyhedron into said material requirements for said room within said structure by selecting at least one plane of said estimation polyhedron and entering a materials request into a query in said estimation program.

11. (original) The method as recited in claim 10, wherein:

- (a) said morphing step further comprises the step of when additional planes better approximate said room undergoing estimation, partitioning said morphed polygon of said estimation polyhedron into at least a first and second morphed polygons to provide an improved estimation of said room undergoing estimation; and
- (b) said revising step further comprises the step of from said at least first and second morphed polygons of said selected facet, including additional estimation attributes corresponding to said first and second morphed polygons.

12. (original) The method as recited in claim 11, wherein said converting said estimation attributes of said estimation polyhedron step comprises the step of:

- (a) converting said estimation attribute into a quantity of a specific one of said material requirements.

13. (original) The method as recited in claim 11, further comprising the steps of:

- (a) redefining another one of said plurality of planes of said estimation polyhedron as said default surface polygon to display, morph and revise estimation attributes associated therewith.

14. (original) The method as recited in claim 10, wherein said displaying step further comprises the steps of:

- (a) assigning one of said plurality of planes of said estimation polyhedron a floor attribute of said room;
- (b) assigning each of others of said plurality of planes of said estimation polyhedron adjacent to said plane having said floor attribute a wall attribute; and
- (c) assigning one of said plurality of planes of said estimation polyhedron adjacent to said ones of said plurality of planes having said wall attribute a ceiling attribute.

15. (currently amended) A computer-readable medium having computer-executable instructions for performing the steps comprising:



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- (a) displaying a default surface polygon, said surface polygon forming one plane of a plurality of planes of a volumetric estimation polyhedron for approximating said a room of a building structure, ~~said plurality of planes each further having an estimation attribute assigned thereto, wherein said estimation polyhedron estimates at least one of the group consisting of an area, volume, and costs associated with said at least one of said facets;~~
  - (b) assigning each of said planes at least one pre-defined estimation attribute that corresponds to a structural attribute of said room;
  - (bc) morphing said default surface polygon into a morphed polygon ~~to~~, such that said morphed polyhedron more closely approximates a plane of said room undergoing estimation;
  - (ed) revising said estimation attribute of said morphed polygon and any adjacent ones of said ~~plurality of planes~~ modified and affected by said morphing step, in order to maintain a closed volume of said estimation polyhedron;
  - (de) repeating said morphing and revising steps until said estimation polyhedron accurately approximates said room of said building structure undergoing estimation; and
  - (ef) ~~converting said estimation attributes of said estimation polyhedron into said material requirements for said room within said structure~~ generating a project estimate by selecting at least one plane of said estimation polyhedron and entering an estimation request into a query in said estimation program, said project estimate is based upon and associated

with said estimation attributes of said estimation polyhedron and  
corresponds to a project to be completed in said building structure.

16. (original) The computer-readable medium of claim 15 having further computer-executable instructions for performing the steps of:

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- (a) said morphing step further comprises the step of when additional planes better approximate said room undergoing estimation, partitioning said morphed polygon of said estimation polyhedron into at least a first and second morphed polygons to provide an improved estimation of said room undergoing estimation; and
  - (b) said revising step further comprises the step of from said at least first and second morphed polygons of said selected facet, including additional estimation attributes corresponding to said first and second morphed polygons.

17. (original) The computer-readable medium of claim 15, wherein said computer-executable instructions for performing the step of converting said estimation attributes of said estimation polyhedron step further comprises computer-executable instructions for performing the step of:

- (a) converting said estimation attribute into a quantity of a specific one of said material requirements.

18. (original) The computer-readable medium of claim 15, having further computer-executable instructions for performing the steps of:

- (a) redefining another one of said plurality of planes of said estimation polyhedron as said default surface polygon to display, morph and revise estimation attributes associated therewith.

19. (original) The computer-readable medium of claim 15, wherein said computer-executable instructions for performing the step of displaying a default surface polygon further comprises computer-executable instructions for performing the step of:

- (a) assigning one of said plurality of planes of said estimation polyhedron a floor attribute of said room;
- (b) assigning each of others of said plurality of planes of said estimation polyhedron adjacent to said plane having said floor attribute a wall attribute; and
- (c) assigning one of said plurality of planes of said estimation polyhedron adjacent to said ones of said plurality of planes having said wall attribute a ceiling attribute.

20. (original) The computer-readable medium of claim 15, having further computer-executable instructions for performing the step of hierarchically grouping additional rooms into levels and grouping a plurality of levels into a structure.

21. (currently amended) A method for computerized modeling of ~~a~~ at least one chamber of a building structure ~~to enable and for enabling~~ estimation of various chamber attributes ~~projects~~, said method comprising the steps of:

- (a) selecting, from an estimation program, a default polyhedron as a volumetric estimation polyhedron, said estimation polyhedron ~~having~~ comprising a plurality of vertices and facets ~~each facet having at least one characteristic and comprised of at least one estimation attribute including an area, wherein said estimation polyhedron estimates at least one of the group consisting of an area, volume, and costs associated with said at least one of said facets;~~
- (b) assigning each of said facets at least one pre-determined estimation attribute corresponding to a structural attribute of said chamber;
- (bc) dragging at least one of said plurality of vertices to alter at least one of said characteristics of ~~a~~ said facet of said estimation polyhedron to obtain an altered facet that more closely approximates said chamber undergoing estimation;
- (ed) recalculating said at least one estimation attribute of said altered facet and any adjacent ones of said plurality of facets of said estimation polyhedron as also modified and affected by said altering step in order to maintain a closed volume of said estimation polyhedron; ~~and~~
- (de) repeating said altering and recalculating steps until said estimation polyhedron accurately depicts said chamber such that said calculated estimation attribute accurately estimates said chamber;

(f) generating a project estimate by selecting at least one facet of said estimation polyhedron and entering an estimation request into a query in said estimation program, said project estimate is based upon and associated with said estimation attributes of said estimation polyhedron and corresponds to one of said chamber project to be completed in said building structure.

22. (previously added) The method as recited in claim 21, wherein:

said altering step further comprises the step of when additional facets better approximate said chamber undergoing approximation, partitioning said selected facet of said estimation polyhedron into at least a first and a second altered facet to provide an improved estimation of said chamber undergoing estimation; and

said recalculating step further comprising the step of including additional estimation attributes corresponding to said first and second altered facets.

23. (new) The method of claim 1, further comprising the steps of:

- (a) obtaining additional volumetric polyhedrons, each of which are utilized as estimation polyhedrons, said additional volumetric polyhedrons also comprising a plurality of facets; and
- (b) combining said additional volumetric polyhedrons with said default volumetric polyhedron to obtain a plurality of volumetric polyhedrons for modeling hierarchal structures comprised of multiple chambers;

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- (c) assigning each of said facets in said plurality of volumetric polyhedrons at least one estimation attribute corresponding to an attribute of one of said chambers in said hierarchal structure;
  - (c) morphing at least one selected facet of said plurality of volumetric polyhedrons to more closely approximate said chambers of said hierarchal structure; and
  - (d) revising said estimation attributes of all relevant facets in response to said step of morphing.
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